



Spring Fisheries Survey Summary Nelson Lake, Sawyer County, 2014

The Hayward DNR Fisheries Management Team conducted a fyke netting survey on Nelson Lake from May 7-10, 2014 targeting walleye, northern pike, black crappie, and yellow perch. The netting survey totaled 38 net nights of effort to mark walleye to estimate total population size. An electrofishing survey was conducted on June 5, 2014 to document the status of largemouth bass and bluegill. Eight miles were shocked throughout the lake. Quality, preferred, and memorable sizes referenced in this summary are based on standard proportions of world record lengths developed for each species by the American Fisheries Society.

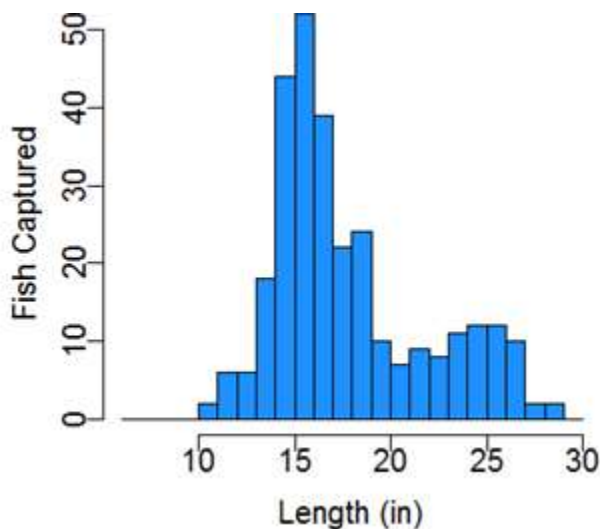
Description of Habitat and Survey Conditions

Nelson Lake is a large but relatively shallow stained-water flowage. Aquatic plant growth is present in many bays but most shorelines are comprised of rock and sand and have sparse aquatic plant growth. The lake association has been very active in habitat improvement by placing “fish sticks” in the water at four different sites throughout the lake. Our netting survey was well timed for both walleye and northern pike and also sampled crappie and perch effectively. Water temperatures were also appropriate for sampling bass and panfish, but fluctuating weather may have changed fish behavior and impacted catch rates when electrofishing.

Walleye (Adult)



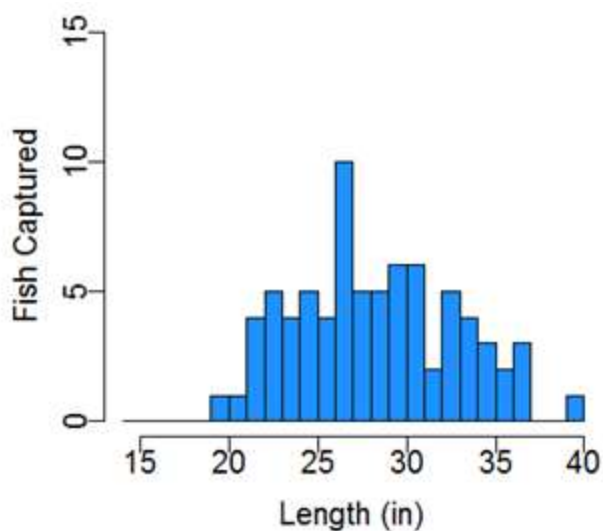
Captured 8 per net-night \geq 10 inches	
Quality Size \geq 15"	74%
Preferred Size \geq 20"	25%



Northern Pike



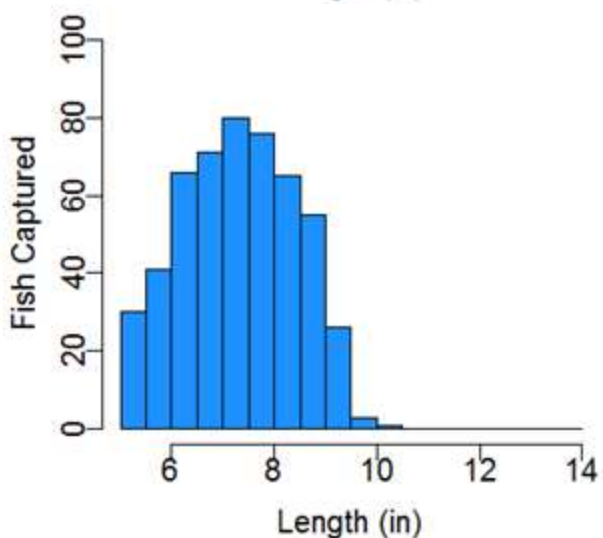
Captured 2 per net-night ≥ 14 inches	
Quality Size ≥ 21 "	97%
Preferred Size ≥ 28 "	49%



Black Crappie



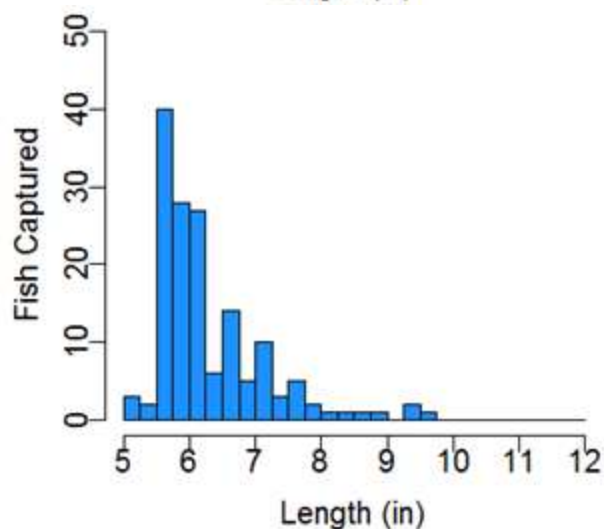
Captured 46 per net-night ≥ 5 inches	
Quality Size ≥ 8 "	29%
Preferred Size ≥ 10 "	1%



Yellow Perch

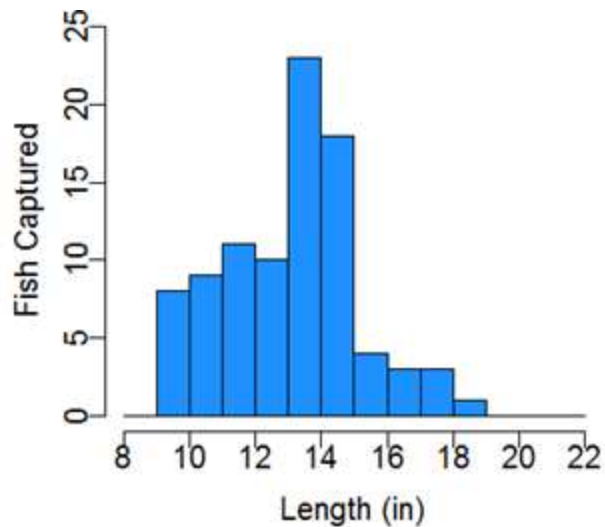


Captured 4 per net-night ≥ 5 inches	
Quality Size ≥ 8 "	5%
Preferred Size ≥ 10 "	0%

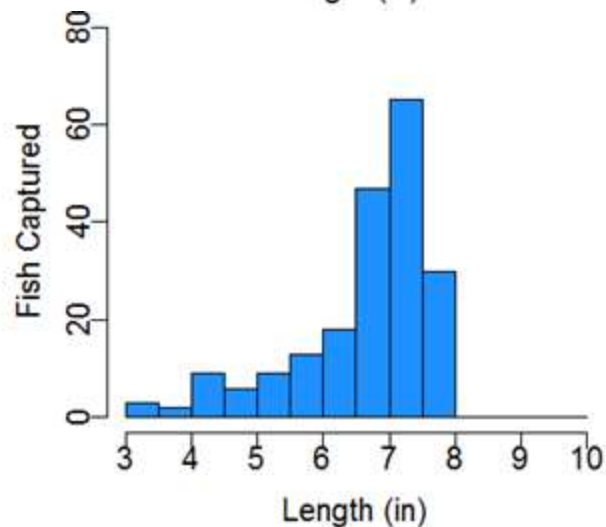




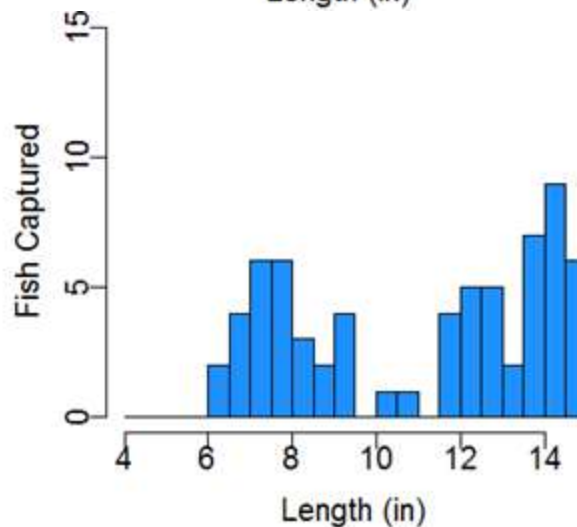
Captured 11 per mile \geq 8 inches	
Quality Size \geq 12"	70%
Preferred Size \geq 15"	12%



Captured 101 per mile \geq 3 inches	
Quality Size \geq 6"	79%
Preferred Size \geq 8"	0%



Captured 3 per mile \leq 10 inches



Summary of Results

Walleye were captured at a moderate rate but it is the size of fish in the survey that was most encouraging. Many young adult walleye (14-17 inches) were captured. Walleye in this size range had been rare in Nelson Lake over the last decade as natural recruitment dropped to very low levels. Extended growth walleye stocking was initiated in 2005 through both the Nelson Lake Association and the DNR and occurred in most years since that time at a rate of approximately 5

per acre. While it cannot be determined conclusively, it seems likely that many of the smaller adult walleye appearing in this survey are the product of those stocking efforts.

Northern pike were captured at a relatively low rate but size structure was excellent with many fish over 30 inches appearing in the sample. A combination of a 32 inch minimum length limit and a decline in esocid lymphosarcoma (a disease which had been afflicting the population in recent years) has led to one of the highest quality pike fisheries in the area.

Black crappie were captured at a relatively high rate but with poor size. Similar patterns of crappie abundance and size have been observed in other lakes where walleye numbers have dropped. The lack of an effective predator on small crappie allows them to pull off overly large year classes which impacts their growth. It is our hope that with walleye potentially rebounding, crappie size will improve.

Yellow perch were not particularly abundant in this survey but are still considered an important part of the Nelson Lake fish community. Perch provide excellent prey for both walleye and northern pike. Habitat enhancements like “fish sticks” have the potential to improve perch reproduction which could have positive impacts on the entire fish community.

Largemouth bass were considerably less abundant in this survey (11 per mile) than in the last survey (2011, 40 per mile). Based on how large this drop was we believe that the difference is mostly related to survey conditions (temperatures were fluctuating during the 2014 survey). Regardless, it is probably safe to say that largemouth bass abundance has not increased in Nelson Lake in recent years. More encouraging is that the average size has increased slightly since the last survey. Both patterns are positive signs that this population, and the fish community as a whole, may be moving toward its traditional balance.

Bluegill were captured in moderate abundance but the sample was dominated by fish between 6 and 8 inches. This is a population that should be attractive to anglers and also may provide an indicator that young walleye are on the rise in the lake. The number of small bluegill (<6 inches) was much lower than the last survey. This may be because of an increase in abundance of young walleye which are an effective predator on bluegill. If walleye can be reestablished as a dominant predator and the existing panfish regulations are complied with, it seems plausible that Nelson Lake could once again become a trophy bluegill destination.

Young walleye were also captured in this survey. Walleye between 6 and 8 inches are likely fish born or stocked in 2013 that have survived their first winter.



Volunteer Rick Lindner with a net full of young adult walleye from the 2014 Nelson Lake survey.

Report by Max Wolter – Fisheries Biologist, Sawyer County

Survey conducted by Max Wolter, Russ Warwick (Fisheries Technician), and Scott Braden (Fisheries Technician)

Special thanks to volunteers Rick Lindner, Bill Wilcox, John Welter, Cory and Zach Nelson, and Ryan Hexum

Reviewed and Approved by Steve Avelallemant